

Coll. Antropol. **24** (2000) 2: 391–395  
UDC 618.31-07  
Original scientific paper

# Early Diagnosis and Treatment of Ectopic Pregnancy

**D. Buković<sup>1</sup>, M. Šimić<sup>2</sup>, M. Kopjar<sup>2</sup>, M. Zadro<sup>2</sup>, R. Fureš<sup>2</sup>, T. Visković<sup>3</sup> and J. Unušić<sup>4</sup>**

<sup>1</sup> University Hospital for Gynaecology and Obstetrics, Zagreb, Croatia

<sup>2</sup> Department of Gynaecology and Obstetrics, General Hospital Zabok, Zabok, Croatia

<sup>3</sup> Health Center »Cvijeta Huis«, Zabok, Croatia

<sup>4</sup> Department of Surgery, University Hospital »Rebro«, Zagreb, Croatia

## ABSTRACT

*During the period from 1995 to 1999, 64 patients were treated for ectopic pregnancy. All patients admitted to the department passed the same procedure including (complete preoperative laboratory findings, Beta HCG, serum progesterone and transvaginal colour Doppler). In patients who had ultrasound finding typical for ectopic pregnancy in combination with positive Beta HCG, conservative treatment was primarily done. In the rest of the patients, Beta HCG was tested every second day and in combination with the clinical and vaginosonographical findings the patients underwent diagnostic or operative laparoscopy. Out of 64 patients 36 had visible ectopic pregnancy when admitted to the clinical department. Three patients had no visible ectopic pregnancy neither at the time of their admission to the department nor at the time of laparoscopy. One of them had cervical pregnancy and the other two had pregnancies in the uterine part of the tube. The patient with cervical pregnancy was treated with metotrexat (MTX) 12 mg daily in 5 doses. One patient with cornual pregnancy was treated with high doses of oxytocin infusion in combination with MEB intravenously 3x1 amp. The other patient with cornual pregnancy underwent laparoscopy with cornual resection and salpingectomy. Four of other tubar pregnancies were treated with metotrexat 12mg/day for 5 days. Other ectopic pregnancies were treated as follows: 36 laparoscopic salpingectomies, 10 laparoscopic salpingotomies with ovum expression, 9 adnexectomies by laparotomy, and 2 laparoscopic adnexectomies.*

## Introduction

During the last decade the incidence of ectopic pregnancy has been in a continuous rise. Early detection of this condition is very important<sup>1</sup>. Colour Doppler vaginosonography and 3D ultrasound in combination with beta HCG and laparoscopy (pneumoperitoneum or gassles) provides early detection of ectopic pregnancy and its treatment<sup>2–5</sup>. Such early detection of ectopic pregnancy provides conservative treatment and assists in avoidance of serious complications of ectopic pregnancy such as haemoperitoneum and hemorrhagic shock. In the last ten years with the use of laparoscopy as a standard procedure in gynaecological practice it has been possible to treat conservatively ectopic pregnancy after early detection (e.g. salpingotomy with ovum expression, inoculation of MTX in gravid tube, and systemic MTX therapy)<sup>6–11</sup>. From 1995 to 1999 we had 64 ectopic pregnancies. One was cervical pregnancy and two pregnancies were in uterine horn (intramural part of the uterine tube). Other pregnancies were mostly in the ampullar part of the uterine tube.

This study focuses on our experience with early detection of ectopic pregnancy and conservative treatment after two or more pathognomonic signs of ectopic pregnancy on ultrasound and good correlation between ultrasound finding and laparoscopic finding in early detection of ectopic pregnancy.

## Material and Methods

From 1995 to September 1999, 76 patients underwent laparoscopy because of a possible ectopic pregnancy. Each of these patients passed the same clinical trial:

- Clinical examination,
- Colour Doppler vaginosonography and 3D ultrasound when necessary,

- Beta HCG, serum progesterone and complete preoperative lab. findings including CRP.

Patients were divided in two groups.

- The first group included patients with positive Beta HCG and visible ectopic pregnancy found by Colour Doppler vaginosonography or at 3D ultrasonography.
- The second group included patients with positive Beta HCG and without visible intrauterine or ectopic pregnancy on Colour Doppler vaginosonography.

The patients from the first group underwent primarily conservative treatment with metotrexat 12 mg daily for 5 days. The patients from the second group underwent laparoscopy after serial measurements of Beta HCG and vaginosonography.

## Results

- Ultrasound showed free fluid in Douglas in one third of the patients.
- More than 2/3 of the patients had characteristic endometrial look for late proliferative phase and early secretory phase.
- Ultrasound adnexal finding was as follows: ½ of the patients had adnexal mass from 2 cm to 9 cm with clearly visible ovary or both ovaries with corpus luteum and characteristic blood flow for corpus luteum.
- Four patients had visible tube with viable embryo with positive HRT.
- In the rest of the patients we found Donut sign with characteristic endometrium and free fluid in Douglas.

In the second group of the patients with positive Beta HCG and vaginosonographically no visible ectopic pregnancy, we did not find ectopic pregnancy dur-

ing laparoscopy. Later on we found one patient to have cervical pregnancy and two more patients with cornual pregnancy.

All other patients from the second group did not show ectopic pregnancy during laparoscopy, and as their Beta HCG rapidly decreased down 5–7 days after laparoscopy, we concluded that they had an early spontaneous abortion.

Beta HCG values were from 99 IU/L to 22.000 IU/L and they were not correlated with the local finding of ectopic pregnancy in the patients with tubar abortion. Serial measurement of Beta HCG values in the patients with viable embryo in tube were almost as in normal pregnancy.

In the patient with cervical pregnancy Beta HCG values before laparoscopy were 1270 IU/L and after laparoscopy they were almost as for normal pregnancy. Two patients with cornual pregnancy had Beta HCG values as for normal pregnancy. All the patients from the first group had serum progesterone lower than 25 and characteristic vaginosonographically endometrial look for late proliferative phase and early secretory phase. In one patient with cornual pregnancy at the time of laparoscopy we found some free fluid in Douglas.

## Discussion

All the patients with amenorrhoea, suffering from pelvic pain and vaginal bleeding with or without medical history of ectopic pregnancy must underwent the same protocol.

- Clinical examination,
- Colour Doppler vaginosonography,
- Beta HCG and serum Progesterone and whenever necessary complete pre-operative lab finding including CRP.

Patients with Beta HCG value greater than 750IU/L and serum progesterone lo-

wer than 25 with no visible intrauterine or ectopic pregnancy on ultrasound must underwent laparoscopy<sup>11–18</sup>. Other patients with two or more patognomnic signs for ectopic pregnancy on ultrasound with the finding of 2–3 cm tube pregnancy, small cornual pregnancy or cervical pregnancy without serious bleeding can be treated medicamentously.

In patients with Beta HCG value lower than 750 IU/L, serum Progesterone lower than 25 and vaginosonographically finding without two or more patognomnic signs for ectopic pregnancy laparoscopy is necessary.

In patients with serum Beta HCG lower than 750 IU/L, serum Progesterone lower than 25 and vaginosonographically no patognomnic signs of ectopic pregnancy it is necessary to measure Beta HCG every second day. If values have plato or are in slight rise or lowering it is necessary to perform laparoscopy.

In patients with Beta HCG lower than 750 IU/L, serum Progesterone lower than 25 and sonographically no patognomnic signs of ectopic pregnancy measurement of Beta HCG should be performed every second day, and if values decrease rapidly it indicates early spontaneous abortion and no need to perform laparoscopy.

In all cases with positive Beta HCG and no visible ectopic pregnancy during laparoscopy it must be carried out for cervical and cornual pregnancy.

From our experience there is a good correlation between the vaginosonographical finding and laparoscopic finding in cases with patognomnic signs for ectopic pregnancy on ultrasound.<sup>18–25</sup>, especially for Donut sign, live embryo in uterine tube, and characteristic endometrial sign for late proliferative and early secretory phase.

One quarter of the patients with ectopic pregnancy had pseudogestational sac. One third of the patients showed Do-

nut sign indicating tube abortion. Almost 2/3 of the patients with tube pregnancy had visible adnexal mass form 2 to 9 cm presenting different echogenicity on ultrasound. In more than 1/3 of the patients we found free fluid in Douglas on ultrasound. More than 2/3 of the patients had on ultrasound endometrial appearance characteristic for late proliferative phase or early secretory phase. All those previously mentioned ultrasound findings patognomonic for ectopic pregnancy in combination with Beta HCG and serum Progesterone are in a very good correlation with laparoscopic finding.

From our experience serum Beta HCG shows no correlation with ultrasound and laparoscopic findings. The lowest serum Beta HCG in our study was 99IU/L with ultrasound and laparoscopic finding of 8 cm big tubal abortion, while the highest value of serum Beta HCG was 22.000 IU/L for six week cornual pregnancy.

## Conclusions

All the patients with amenorrhoea suffering from vaginal bleeding and pelvic pain with or without medical history of ectopic pregnancy should undergo the same clinical treatment with Colour Dop-

pler vaginosonography and Beta HCG serum Progesterone, and depending on these findings conservative treatment or laparoscopy.

In cases with positive Beta HCG with no visible intrauterine pregnancy and with one or more patognomonic signs of ectopic pregnancy on ultrasound it is not necessary to perform laparoscopy. After such ultrasound finding, drug therapy with metrotrexat 12 mg/day for 5 days will be the best therapeutic choice. From our experience characteristic appearance of the endometrium can be also used as a patognomonic ultrasound finding of ectopic pregnancy.

In-patients with positive Beta HCG and no visible ectopic pregnancy during laparoscopy, Beta HCG must be measured every second day to exclude early spontaneous abortion. If Beta HCG values increase less than usually or have plato, cornual and cervical pregnancy must be excluded. Early detection of ectopic pregnancy enables better conservative treatment of such condition (drug therapy with metrotrexat, laparoscopic salpingotomy with ovum expression, pneumoperitoneum or gassless laparoscopic salpingectomy).

## REFERENCES

1. BANERJEE, S., N. ASLAM, N. ZOŠMER, B. WOELFER, D. JURKOVIC, *Ultrasound of Obstet. Gynecol.*, 14 (1999) 231. — 2. HERTZBERG, B. S., M. A. KLEWER, J. D. BOWIE, *Am. J. Roentgenol.*, 173 (1999) 1301. — 3. MARCUS, S., E. CHENG, B. GOFF, *Obstet. Gynecol.*, 94 (1999) 804. — 4. DART, R., L. DART, P. MITCHELL, N. O'ROURKE, *Acad. Emerg. Med.*, 6 (1999) 1024. — 5. SCHAFER, M. T., W. HENRICH, *Ultraschall. Med.*, 20 (1999) 171. — 6. MOL, B. W., P. J. HAJENIUS, S. ENGELSBEL, W. M. ANKUM, D. J. HEMRIKA, F. VAN DER VEEN, P. M. BOSSUYT, *Am. J. Obstet. Gynecol.*, 181 (1999) 945. — 7. BARNHART, K. T., H. SIMHAN, S. A. KAMELE, *Obstet. Gynecol.*, 94 (1999) 583. — 8. KEMP, B., S. KERTSCHANSKA, S. HANDT, A. FUNK, P. KAUFMANN, W. RATH, *Am. J. Obstet. Gynecol.*, 181 (1999) 615. — 9. ELITO, J. JR., A. P. REICHMANN, M. N. UCHIYAMA, L. CAMANO, *Int. J. Gynaecol. Obstet.*, 67 (1999) 75. — 10. ORDEN, M. R., S. GUDMUNDSSON, H. L. HELIN, P. KIRKINEN, *Ultrasound Obstet. Gynecol.*, 14 (1999) 348. — 11. SU, Y. N., J. C. SHIH, W. H. CHIU, C. N. LEE, W. F. CHENG, F. J. HSIEH, *Ultrasound Obstet. Gynecol.*, 14 (1999) 284.

*D. Buković*

*University Hospital for Gynaecology and Obstetrics, Petrova 13, 10000 Zagreb, Croatia*

## **RANA DIJAGNOZA I LIJEČENJE EKTOPIČNE TRUDNOĆE**

### **S A Ž E T A K**

U razdoblju od 1995 do 1999 godine imali smo 64 bolesnice koje su imale ektopičnu trudnoću. Sve bolesnice koje su primljene na naš odjel prošle su isti protokol uključujući kompletni prijeopracijski lab., beta HCG, serum progesteron, i transvaginalni obojeni doppler. U bolesnica s ultrazvučnim nalazom evidentnim za ektopičnu trudnoću i pozitivnim beta HCG nalazom primarno je ordinirana konzervativna terapija. Ostalim bolesnicama je rađen beta HCG svaki drugi dan i u kombinaciji s kliničkim nalazom te vaginosonografskim nalazom, daljnji su koraci poduzeti, uključujući dijagnostičku i operativnu laparoskopiju. Od 64 bolesnice 36 je imalo vidljivu ektopičnu trudnoću u vrijeme prijema na naš odjel. Tri bolesnice nisu imale vidljivu ektopičnu trudnoću niti kod prijema na odjel niti u vrijeme dijagnostičke laparoskopije. Jedna od njih je imala cervikalnu trudnoću, dvije su imale trudnoću u intramuralnom dijelu tube. U jedne bolesnice s cervikalnom trudnoćom terapija je bila provedena s metrotrexatom 12 mg/dan kroz pet dana. U jedne bolesnice s trudnoćom u intramuralnom dijelu tube terapija je sadržavala visoke doze syntocinona u infuziji te MEB 3x1 amp. U jedne bolesnice s trudnoćom u intramuralnom dijelu tube urađena je laparoskopska salpingektomija sa kornualnom resekcijom jajovoda. U ostale četiri bolesnice primarno je provedena terapija s metrotrexatom 12 mg/dan kroz pet dana. Ostale ektopične trudnoće su bile tubarne i riješene su na slijedeći način: 36 laparoskopskih salpingektomija, 10 laparoskopskih salpingotomija s ekspresijom ovuluma, 9 adnexektomija s laparotomijskim pristupom, i dvije laparoskopske adnektomije.